SECTION 02210
SITE EXCAVATION AND ROUGH GRADING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Definitions:
   1. Unsuitable material: Debris and/or soil material judged unsuitable by Government for support of slabs or other site improvements.
   2. Engineer: Soils Engineer employed by the Contractor, empowered to conduct inspections and make approvals.

1.2 QUALITY ASSURANCE

A. Compaction density test:
   1. Modified Proctor, ASTM-D1557.

B. Layout work by Surveyor or Civil Engineer registered in State of Georgia.

C. The Contractor shall hire an independent soils laboratory to conduct in place moisture and density tests.
   1. Contractor shall also pay for retests of material not passing initial tests.

D. Tolerances of sub-grade:
   1. Unsurfaced areas: Plus/minus 0.20 FT from required elevations.
   2. Paved areas: Plus/minus 0.10 FT from required elevations.

1.3 JOB CONDITIONS

A. Protect existing facilities, utilities (overhead and underground), sidewalks, pavements to remain.
   1. Notify Government and make repair as directed at no cost to Government.

B. Protect graded areas against erosion.
   1. Re-establish grade where settlement or washing occurs at no extra cost.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fill materials:
   1. Reasonably free of roots, organic material, trash, frozen matter, and stones larger than 6 IN as approved by Soils Engineer.
   2. Add water to dry material, as required.
   3. Allow wet material to dry, as required.
   4. Fill can only be obtained on site where removed from excavating and grading.
   5. Provide additional off-site borrow or fill as required, at no extra cost.

B. Surplus material:
   1. Remove from site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Layout units, structures, piping, roads, parking areas and walks and establish their elevations.

B. Perform other layout work required.

C. Preparation for embankments and fills:
   1. Before fill is started, scarify to a minimum depth of 6 IN under new roads, parking areas or streets.
   2. Bring to optimum moisture content.
   3. Compact to a minimum 95 percent.

3.2 GENERAL

A. Excavate and grade materials to design elevations.

B. Excavate and grade site to subgrades of paved and unpaved areas as indicated.

C. Excavate for miscellaneous footings, slabs, walks and other structures.

D. Cut and fill as required to bring existing grades to rough grades.

E. Furnish and place additional approved material required to bring subgrade to proper line and grade.

F. During construction, shape and drain embankments and excavation.

G. Maintain ditches and drains to provide drainage.

H. Provide pumping if required.

I. Do not fill under footings. If excavation is deeper than necessary, fill with concrete of same strength as footing concrete.

J. Remove unsuitable materials which cannot be compacted as specified and replace with suitable material.
   1. Dispose material off site as directed.

K. Remove materials unsuitable to receive fill and replace with suitable material.

3.3 CONSTRUCTION OF EMBANKMENTS AND FILLS

A. Construct embankments and fills to lines and grades.

B. Make completed fill correspond to shape of typical cross section or contour indicated regardless of method used to indicate shape, size, and extent of line and grade of work.

C. Insure that cobbles larger than 2 IN, are not placed in upper 6 IN of fill or embankment.

D. Place material in lifts, maximum 8 IN loose thickness.

E. Place layers horizontally and compact each layer to specified density prior to placing additional fill.

F. The 12 IN thick subgrades material beneath the pavement aggregate base course shall be modified by mixing in limerock or clayey materials uniformly to obtain a CBR (California Bearing Ratio) value of 30 or better and shall be subject to the approval of the Soils Engineer.

G. Compact using suitable equipment.
   1. Control moisture to meet requirements of compaction.
   2. Do not place materials which exceed 3 percent above or below optimum moisture content in embankments or fills.

H. Under roadways and parking areas and extending 1 FT beyond proposed curb line or pavement edge measured perpendicular from centerline, compact to 95 percent maximum dry density.

I. Under walk paving, compact to 95 percent maximum dry density.

J. For other embankments and fills not listed, compact to 90 percent of maximum dry density.

K. Under proposed building and structures, compact to density as specified in Section 02222.

3.4 LAYOUT FOR ROUGH GRADING

A. Install grading stakes for checking rough and finished grade throughout area to be graded.
   1. Set at 50 FT grid intervals, and as required to reflect grading variations.
   2. Stakes: 1 x 2 x 24 IN, sound wood.
   3. Set securely so that minimum of 6 IN is above rough grade.
   4. Mark each stake to indicate design finished grade.

B. Maintain stakes until Government has reviewed rough grade.

END OF SECTION